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WATER SUPPLY AND POLLUTION CONTROL RESEARCH INVENTORY ACTIVE PROJECTS, 1958

Frank A. Butrico, et al

Public Health Service
Washington, D. C.

1960

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CINCINNATI, OHIO

WATER SUPPLY AND POLLUTION CONTROL

Research Inventory Active Projects - 1958

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

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WATER SUPPLY AND POLLUTION CONTROL

Research Inventory
Active Projects - 1958

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Prepared by

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Research Grants Coordinator

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Engineering Services and
Division of Water Supply and Pollution Control
Washington 25, D. C.

I

FOREWORD

We are moving forward into an unprecedented era, with a reduced time factor for equating the impact of pollution on our water resources. The type and rapidity of change require much keener vision in anticipating and meeting problems, and our research efforts must be geared accordingly. Our practice has outrun theory in many aspects of knowledge in this field.

We recognize the need for a record of active research projects in water supply and pollution control. The Research Inventory has been prepared to enable scientists and engineers to review the current status of this research and to chart future needs for action.

M. D. Hollis
Assistant Surgeon General
Chief Engineer

There is a great need today for more basic knowledge in all areas of water supply and in the protection of water quality. The amount of research underway in this field is small in relation to growing problems; that which is needed will require the combined efforts of researchers everywhere. This inventory of active projects can do much to stimulate expanded programs of water supply and pollution control research which are essential if we are to solve the complex problems of our growing nation.

Gordon E. McCallum, Chief
Division of Water Supply
and Pollution Control

ACKNOWLEDGEMENT

In compiling the basic data for the Research Inventory the Public Health Service was assisted by the American Water Works Association, the Water Pollution Control Federation, the National Technical Task Committee on Industrial Wastes, and others. Grateful acknowledgement is made of the contribution of these organizations in distributing and collecting the questionnaires upon which the Inventory depends.

INTRODUCTION

Research Inventory No. 1 is a report summarizing data on 280 water supply and pollution control research projects active in the United States during 1958. The information presented was compiled from questionnaires distributed to investigators and administrators known to be conducting or directing research in water, sewage, and industrial wastes.

The Inventory is designed to provide a useful record of research underway, and also to facilitate communication between investigators. It includes a brief report of basic data concerning each research project, a comprehensive index of subjects being studied, and an address list for use in the exchange of information.

It is recognized that the first Research Inventory cannot present a complete listing of all active projects in water supply and pollution control research. However, the Inventory is to be revised and reissued annually, and made as comprehensive as possible. This can be achieved with the assistance of all individuals who can provide additional reports or suggestions.

Individuals who submitted reports for this issue will receive copies of Research Inventory No. 1, and they will be requested to submit reports for the second issue of the Inventory. Others having information or suggestions should correspond with one of the following:

Mr. R. J. Faust, Secretary, American Water Works Association, 2 Park Avenue, New York 16, New York.

Mr. Ralph E. Fuhrman, Executive Secretary, Water Pollution Control Federation, 4435 Wisconsin Avenue, Washington 16, D. C.

Secretary, National Technical Task Committee on Industrial Wastes, Division of Water Supply and Pollution Control, U. S. Public Health Service, Washington 25, D. C.

Research Grants Coordinator, Engineering Resources Program, Division of Engineering Services, U. S. Public Health Service, Washington 25, D.C.

ACKNOWLEDGEMENT

In compiling the basic data for the Research Inventory the Public Health Service was assisted by the American Water Works Association, the Water Pollution Control Federation, the National Technical Task Committee on Industrial Wastes, and others. Grateful acknowledgement is made of the contribution of these organizations in distributing and collecting the questionnaires upon which the Inventory depends.

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HOW TO USE THE

RESEARCH INVENTORY

The Research Inventory is divided into three sections. These sections provide a quick guide to the list of research projects, to a reference index, and to sources from which further information may be available.

SECTION 1. **Research Projects - list by States**..... Page 3
Basic data, listing briefly:
WHERE the project is located
WHAT is being investigated
WHO is directing the research
and a record of additional details.
(Project numbers are reference numbers)

SECTION 2. **Subject Index - by research areas** .....Page 37
A reference guide to locating:
AREAS of related research
SUBJECTS of research interest
and references to the project list.
(Reference numbers refer to Project numbers)

SECTION 3. **Address List - for information** .....Page 59
Providing names and addresses of:
REPORTERS of research projects
who may be contacted for
available information.
(Reference numbers refer to Project numbers)

It is suggested that the introductory page of each section of the Inventory be reviewed. These pages explain the arrangement of information presented. Those using the Inventory may then utilize either the Project List (Section 1) or the Subject Index (Section 2) for locating information. For projects of particular interest he may refer to the Address List (Section 3) to obtain additional information.

1 Research Projects
LIST BY STATES

PROJECT LIST

The first section of the Research Inventory presents basic data on the 280 research projects reported in the survey. The projects are listed geographically by states and institutions.

Projects are numbered consecutively and the numbers refer also to the Subject Index (Section 2) and the Address List (Section 3).

The Project List includes:

LOCATION - the State, Institution, and City.

TITLE - a brief description of the research.

INVESTIGATOR - in charge of the project.

TYPE OF RESEARCH - reported by the investigator as basic (bas), basic-applied (bas-appl), or applied (appl).

SUPPORT - listing source of support and amount (when reported); the latter was not required of reporters.

INFORMATION - Detailed information is available when indicated (Info.). It is not available when indicated (No info.) because no publications have been issued, or because there are restrictions on the information which may be disclosed.

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1 ALABAMA - Alabama Polytechnic Institute, Auburn
The Feasibility of Domestic Sewage Lagoons for Alabama
Theodore Jaffe; Bas-Appl; Support: Ala. Poly. Inst.; Info. 1

2 ALABAMA - Alabama Polytechnic Institute, Auburn
The Treatment of Textile Desizing Wastes
Theodore Jaffe; Bas-Appl; Support: Ala. Poly. Inst. Engrg. Experiment Sta. $5,570; Info. 2

3 ALASKA - Alaska Water Pollution Control Board, Juneau
Characteristics of Silver Bay for Control of Pulp Mill Pollution
E. F. Eldridge; Appl; Support: State, Alaska Lumber & Pulp Co. U. S. Fish & Wildlife Serv.; Info. 3

4 ALASKA - Alaska Water Pollution Control Board, Juneau
Characteristics of Ward Cove as a Measure of Pulp Mill Pollution
Wm. L. Porter; Appl; Support: State; Info. 4

5 ALASKA - Alaska Water Pollution Control Board, Juneau
Septic Tanks With Subsurface Disposal Fields Built at Fairbanks
Chas. Froman; Appl; Support: State; Info. 5

6 ARKANSAS - Arkansas Water Pollution Control Commission, Little Rock
Automatic Compositing Waste Sampler
M. L. Wood; Appl; Support: State; No Info. 6

7 ARKANSAS - Arkansas Water Pollution Control Commission, Little Rock
Automatic Stream Gauging and Recording Device
M. L. Wood; Appl; Support: State; No Info. 7

8 ARKANSAS - University of Arkansas, Fayetteville
Variables Affecting Efficiency of Coarse-Grained Water Filters
Loren R. Heiple; Appl; Support: Winthrop Rockefeller; Info. 8

9 CALIFORNIA - California Institute of Technology, Pasadena
Resuspension of Flocculent Solids in Sedimentation Basins
A. C. Ingersoll; Bas-Appl; Support: Fed. NO $15,158; Info 9

10 CALIFORNIA - California State Water Pollution Control Board, Sacramento
Current Measurement in Estuarine and Coastal Waters
J. W. Johnson; Appl; Support: Fed.-State $7,000; Info. 10

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11	CALIFORNIA - Humboldt State College, Arcata Oceanographic Study Between the Points of Trinidad & Eel Rivers Humboldt State Coll; Appl; Support: Fed.-State $20,000; Info.	11
12	CALIFORNIA - Humboldt State College, Arcata Dissolved Oxygen Requirements of Aquatic Insects John W. DeWitt; Bas; Support: Fed. NG $1,955; Info.	12
13	CALIFORNIA - Humboldt State College, Arcata Oceanographic Study of Near-Shore Waters Off Humboldt Bay Geo. H. Allen; Bas; Support: State $20,000; Info.	13
14	CALIFORNIA - National Canners Association, Berkeley Water Conservation in Food Canning Walter A. Mercer; Bas-Appl; Support: Fed. NG $12,500; Info.	14
15	CALIFORNIA - Scripps Institute of Oceanography, La Jolla Effect of Organic Substances from the Sea on Bacteria Dr. Calem E. Jones; Bas; Support: Fed. NG $9,984; Info.	15
16	CALIFORNIA - University of California, La Jolla Effects of Pollution Upon Kelp University of Calif.; Appl; Support: Fed.-State $20,000; Info.	16
17	CALIFORNIA - University of California, Berkeley Reaction Kinetics of Anaerobic Fermentation Systems Erman A. Pearson; Bas-Appl; Support: U. of Calif. $5,000; Info.	17
18	CALIFORNIA - University of California, Berkeley Variables Affecting Removal of ABS by Sewage Treatment Plants P. H. McGauhey; Bas-Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $17,500; Info.	18
19	CALIFORNIA - University of Southern California, Los Angeles Chromatographic Assay of Extracellular Algal Metabolism Products Robt. C. Ware; Bas; Support: Fed. NG $19,136; Info.	19
20	CALIFORNIA - University of Southern California, Los Angeles Quantity of Oily Substances on Beaches and Near-Shore Waters Robt. C. Ware; Bas-Appl; Support: State $25,000; Info.	20

21 CALIFORNIA - University of Southern California, Los Angeles
A Short Method for Measuring ABS in Water and Sewage
Dean Alvah Hall; Bas; Support: Assoc. of Amer. Soap & Glycerine Producers $5,500; Info. 21

22 CALIFORNIA - University of Southern California, Los Angeles
Relationships of Polychaetous Annelids to Marine Pollution
John L. Mohr; Bas-Appl; Support: Fed. RG $8,100; Info. 22

23 CALIFORNIA - University of Southern California, Los Angeles
Survey of So. California Shelf for Effects of Waste Discharges
Robt. E. Stevenson; Bas-Appl; Support: State $125,000; Info. 23

24 COLORADO - University of Cclorado, Denver
Shigella Dysentery Organisms in Contaminated Irrigation Water
Wen-Lan Lou Wang; Bas-Appl; Support: Fed. RG $14,777; Info. 24

25 CONNECTICUT - Wesley[illegible] University, Middletown
Automatic Disso[illegible]ed Oxygen Determination
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 25

26 CONNECTICUT - Wesleyan University, Middletown
Automatic Conductivity Meter
M. G. Burford; Bas-Appl; Support: State $1,000; Info. 26

27 CONNECTICUT - Wesleyan University, Middletown
Automatic Sample Collector
M. G. Burford; Bas-Appl; Support: State $1,000; Info. 27

28 CONNECTICUT - Wesleyan University, Middletown
Effect of Copper on Sludge Digestion
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 28

29 CONNECTICUT - Wesleyan University, Middletown
Pollution Reduction in Cotton Mills by Process Chemical Changes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 29

30 CONNECTICUT - Wesleyan University, Middletown
Pollution Reduction in Woolen Mills by Process Chemical Changes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 30

31 CONNECTICUT - Wesleyan University, Middletown
Pollution Sources from Printed Circuit Plants
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 31

32 CONNECTICUT - Wesleyan University, Middletown
Set-up and Control of Experimental Sludge Digestion
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 32

33 CONNECTICUT - Wesleyan University, Middletown
Textile Waste Pollution Survey Simplified
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $1,000; Info. 33

34 CONNECTICUT - Wesleyan University, Middletown
Treatment of Tannery Wastes
M. G. Burford; Bas-Appl; Support: N. E. Interstate Water Polln. Cont. Comm. $2,000; Info. 34

35 CONNECTICUT - Wesleyan University, Middletown
Use of Versene to Eliminate Effect of Metals on B.O.D.
M. G. Burford; Bas-Appl; Support: State; Info. 35

36 CONNECTICUT - Wesleyan University, Middletown
Improvement of Analytical Methods
M. G. Burford; Bas; Support: State; Info. 36

37 CONNECTICUT - Wesleyan University, Middletown
Pilot Treatment Plants for Dairy and Automatic Laundry Wastes
M. G. Burford; Bas-Appl; Support: State; Info. 37

38 CONNECTICUT - Wesleyan University, Middletown
Properties of Various Coagulating Agents
M. G. Burford; Bas-Appl; Support: State; Info. 38

39 CONNECTICUT - Yale University, New Haven
Ion Exchange Treatment of Electroplating and Brass Wastes
Chas. A. Walker; Bas-Appl; Support: State; Info. 39

40 CONNECTICUT - Yale University, New Haven
Estimating Yields of a Reservoir on a Digital Computer
E. L. MacLeman; Appl; Support: MIT Computer Center & New Haven Water Co.; Info. 40

41 CONNECTICUT - Yale University, New Haven
Lake Whitney Sanitary Conditions Related to Lab Examinations
E. L. MacLeman; Bas-Appl; Support: New Haven Water Co.; Info. 41

42 DELAWARE - University of Delaware, Newark
Settling Properties of Sludges
V. C. Behn; Bas; Support: Fed. NSF $1,000; Info. 42

43 DELAWARE - University of Delaware, Newark
Storm Drainage Research Project
Paul Bock; Appl; Support: State $13,000; Info. 43

44 FLORIDA - University of Florida, Gainesville
Comprehensive Study of Water Coagulation
A. P. Black; Bas; Support: Fed. RG $19,527; Info. 44

45 FLORIDA - University of Florida, Gainesville
Ion Exchange Resins to Remove Fluoride Ion from Drinking Water
A. P. Black; Bas; Support: Fed. RG $5,770; Info. 45

46 FLORIDA - University of Florida, Gainesville
Acid Intermediates Occurring During Anaerobic Fermentation
A. M. Buswell; Appl; Support: Fed. RG $9,027; Info. 46

47 FLORIDA - University of Florida, Gainesville
Bacterial Oxidation of Nitrite
A. M. Buswell; Bas-Appl; Support: Fed. RG $15,352; Info. 47

48 FLORIDA - University of Florida, Gainesville
Relation Between Interfacial Hydration and Freezing
A. M. Buswell; Bas; Support: Fed. RG $16,790; Info. 48

49 FLORIDA - University of Florida, Gainesville
Anti-Pollution and Sewage Disposal for Florida Communities
F. W. Gilcreas; Appl; Support: State $10,000; Info. 49

50 FLORIDA - University of Florida, Gainesville
Secondary Sewage Treatment Study Using Radioactive Tracers
F. W. Gilcreas; Bas; Support: Fed. RG $18,112; Info. 50

51 FLORIDA - University of Florida, Gainesville
Dispersion and Effects of Industrial Airborne Wastes
E. R. Hendrickson; Bas; Support: Fed. RG $20,215; Info. 51

52 FLORIDA - University of Florida, Gainesville
Aspects of Radiation Acquired by Fresh-Water Microorganisms
Jas. B. Lackey; Bas; Support: Fed. AEC $10,860; Info. 52

53 FLORIDA - University of Florida, Gainesville
Taxonomy and Ecology of Iron and Sulfur Bacteria
Jas. B. Lackey; Bas; Support: Fed. RG $14,835; Info. 53

54 GEORGIA - Georgia Institute of Technology, Atlanta
Chicken Processing Waste Treatment
Robt. S. Ingols; Bas-Appl; Support: State; Info. 54

55 GEORGIA - University of Georgia, Athens
Effect of Oxygen Tension on Fish Common to the Southern U. S.
Donald C. Scott; Bas; Support: Natl. Council for Stream Improvement; $10,450; Info. 55

56 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Coagulating Water With Ferrous Sulfate Liquid From Steel Mills
John R. Baylis; Appl Support: Local; Info. 56

57 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Corrosion of Cast Iron Water Pipe
John R. Baylis; Appl; Support: Local; Info. 57

58 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Detection of Coliform Bacteria With the Electron Microscope
LeRoy E. Scarce; Appl; Support: Local; Info. 58

59 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Sand Bed Studies and Gravel Movement in Filter Bed Maintenance
John R. Baylis; Appl; Support: Local; Info. 59

60 ILLINOIS - Chicago Department of Water and Sewers, Chicago
High Rate Filtration
John R. Baylis; Appl; Support: Local; Info. 60

61 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Filtered Water Coagulated Material Detection by Membrane Filter
Jas. C. Vaughn; Appl; Support: Local; Info. 61

62 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Monitoring Water for Radioactivity
John R. Baylis; Appl; Support: Local; Info. 62

63 ILLINOIS - Chicago Department of Water and Sewers, Chicago
Ridged Gelatinous Coating in Water Pipes Causing Friction Loss
John R. Baylis; Bas-Appl; Support: Local; Info. 63

64 ILLINOIS - Illinois Institute of Technology, Chicago
Effect of Ammonium Ion Concentration on Biological Oxidation
Richard Pavia; Bas-Appl; Support: Ill. Inst. of Tech.; Info. 64

65 ILLINOIS - Illinois Institute of Technology, Chicago
Agent in Lake Michigan Inhibiting E. Coli and Related Bacteria
L. R. Hedrick; Bas; Support: Fed. RG $9,155; Info. 65

66 ILLINOIS - Illinois State Water Survey, Urbana
Chromatographic Identification of Organic Acids in Water
T. E. Larson; Bas-Appl; Support: State; Info. 66

67 ILLINOIS - Illinois State Water Survey, Urbana
Reservoir Sediment and Watershed Factors at Springfield Plain
J. B. Stall; Bas-Appl; Support: Fed-State; Info. 67

68 ILLINOIS - Illinois State Water Survey, Urbana
Drop-Inlet Spillway Research
H. W. Humphreys; Bas-Appl; Support: State; Info 68

69 ILLINOIS - Illinois State Water Survey, Urbana
Evaporation Suppression from Water Surfaces
W. J. Roberts; Appl; Support: State; Info. 69

70 ILLINOIS - Illinois State Water Survey, Urbana
Ground-Water Occurrence, Yield & Movement in American Bottom
H. F. Smith; Bas-Appl; Support: State; Info. 70

71 - 80

71	ILLINOIS - Illinois State Water Survey, Urbana Ground-Water Recharge in Peoria Robt. H. Harmeson; Bas-Appl; Support: State; Info.	71
72	ILLINOIS - Illinois State Water Survey, Urbana Loss of Carrying Capacity in Water Mains Due to Water Quality T. E. Larson; Bas-Appl; Support: Fed. RG $20,000; Info.	72
73	ILLINOIS - Illinois State Water Survey, Urbana Mounts for Low-Level Radioactivity Counting in Water Solids T. E. Larson; Appl; Support: State; Info.	73
74	ILLINOIS - Illinois State Water Survey, Urbana Study of Surface Precipitation Using Radar Instrumentation Glenn Stout; Bas-Appl; Support: U. S. Army Signal Corps; Info.	74
75	ILLINOIS - Sanitary District, Greater Peoria Anaerobic Contact Process for Domestic Sewage Treatment Leon Kraus; Appl; Support: Fed. $5,500; Info.	75
76	ILLINOIS - University of Illinois, Urbana Biological Treatment of Petrochemical Wastes R. S. Engelbrecht; Bas-Appl; Support: Fed. RG $8,000; Info.	76
77	ILLINOIS - Wilson & Company, Inc., Chicago Anaerobic Digestion Mixed Liquor Separation Studies A. J. Steffen; Appl; Support: Wilson & Co.; Info.	77
78	INDIANA - The Hays Corporation, Michigan City Development of Dissolved Oxygen Analyzer W. H. Pugsley; Appl; Support: Fed. $14,300; Info.	78
79	INDIANA - Purdue University, Lafayette Treatment of Strawboard and Semi-Chemical Bleaching Liquors Don E. Bloodgood; Appl; Support: Natl. Council for Stream Improvement; $3,348; Info.	79
80	INDIANA - Purdue University, Lafayette Contaminants in Liquid Chlorine and Methods for Their Estimation M. G. Mellon; Bas-Appl; Support: Fed. RG $10,178; Info.	80

81 INDIANA - Purdue University, Lafayette
Aerobic Digestion of Sludge
Don E. Bloodgood; Bas; Support: Purdue U.; Info. 81

82 INDIANA - Purdue University, Lafayette
Effect of Temperature on Digestion
Don E. Bloodgood; Bas; Support: Purdue U.; Info. 82

83 INDIANA - Purdue University, Lafayette
Mechanism of Hydrogen Sulfide Production
G. H. Teletzke; Bas; Support: Purdue U.; Info. 83

84 INDIANA - Purdue University, Lafayette
Semi-Chemical Bleaching Wastes Research
Don E. Bloodgood; Bas; Support: Natl. Council for Stream Improvement $5,000; Info. 84

85 INDIANA - Purdue University, Lafayette
Trickling Filter Studies
Don E. Bloodgood; Bas; Support: Group of interested Manufacturers $3,000; Info. 85

86 INDIANA - Purdue University, Lafayette
Volatile Acid Formation During Sewage Sludge Digestion
G. H. Teletzke; Bas; Support: Fed. RG $4,760; Info. 86

87 INDIANA - Purdue University, Lafayette
Effect of Disinfection Dosages on Coal-Tar Lined Cast Iron Pipe
H. R. Wilke; Bas-Appl; Support: Clow Pipe Co. $20,000; Info. 87

88 INDIANA - Purdue University, Lafayette
Farm Pond Water Treatment for Domestic Use
H. R. Wilke; Appl; Support: Fed. RG $4,364; Info. 88

89 IOWA - Iowa State College, Ames
Diatomite Filtration of Municipal Water Supplies
E. R. Baumann; Bas-Appl; Support: Iowa State Coll. & Everpure, Inc. $4,500; Info. 89

90 IOWA - Iowa State College, Ames
Plant-Scale Study of Preaeration in Sewage Treatment
E. R. Baumann; Bas-Appl; Support: Fed. RG $13,900; Info. 90

91 IOWA - Iowa State College, Ames
Superchlorination-Dechlorination Studies on Small Water Supplies
E. R. Baumann; Bas-Appl; Support: Iowa State Coll. & Everpure, Inc. $4,500; Info. 91

92 IOWA - Rath Packing Company, Waterloo
Waste Disposal
R. C. Burrell; Appl; Support: Roth Packing Co. $10,000; Info. 92

93 KANSAS - Kansas State Board of Health, Topeka
Sources and Seasonal Variations of Nitrates in Water Supply Wells
Dwight F. Metzler; Bas-Appl; Support: Fed. RG $1,840; Info. 93

94 KANSAS - Kansas State Board of Health, Topeka
Coliform Organisms and Enterococci as Indices of Water Quality
Cassandra Ritter; Appl; Support: Fed. RG $6,095; Info. 94

95 KANSAS - Kansas State College, Manhattan
Filtering Farm Pond Water
T. H. Lord; Appl; Support: Kan. State Coll.; Info. 95

96 KANSAS - University of Kansas, Lawrence
Design Criteria for Turnpike Sewage Treatment Plants
R. T. Page; Bas-Appl; Support: State; Info. 96

97 KANSAS - University of Kansas, Lawrence
Synthetic Detergent Removal in Municipal Water Supplies
R. T. Page; Bas-Appl; Support: U. of Kan.; Info. 97

98 KENTUCKY - University of Kentucky, Lexington
Industrial Waste Treatment and Effects on Public Waters
Sam C. Hite; Appl; Support: State $10,000; No info. 98

99 KENTUCKY - University of Louisville, Louisville
Aquatic-Life Resources Project for the Ohio River
Wm. M. Clay; Appl; Support: State $25,000; Info. 99

100 KENTUCKY - University of Louisville, Louisville
Radioactivity Monitor Project Along the Ohio River
Wm. M. Clay; Bas-Appl; Support: State $12,000; Info. 100

101 LOUISIANA - Louisiana State University, Baton Rouge
Treatment of Kraft Mill Wastes for Removal of Color
Herbert F. Berger; Appl; Support: Natl. Council for Stream Improvement $8,985; Info. 101

102 LOUISIANA - Louisiana State University, Baton Rouge
Dissolved Oxygen Distribution Profiles Under Various Conditions
Arthur G. Keller; Bas-Appl; Support: La. Sugar Producers Waste Control Council $2,400; Info. 102

103 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Biological and Chemical Assay of Louisiana Sugar Mill Wastes
Robt. A. LaFleur; Bas-Appl; Support: State; Info. 103

104 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Survey of the Mississippi River in the Vicinity of Baton Rouge
Richard T. Gregg; Bas; Support: State $20,000; Info. 104

105 LOUISIANA - Louisiana Wildlife and Fisheries Commission, Baton Rouge
Statewide Water Quality Inventory
K. E. Biglane; Bas; Support: State; Info. 105

106 LOUISIANA - Northwestern State College, Natchitoches
Distribution of Tendipedidae and Domestic Sewage Pollution
Jas. E. Sublette; Bas; Support: Fed. RG $3,370; Info. 106

107 MAINE - Bates College, Lewiston
Control of Hydrogen Sulfide Production in Surface Waters
Walter A. Lawrence; Bas; Support: Natl. Council for Stream Improvement; Info. 107

108 MAINE - University of Maine, Orono
Development of More Efficient Oxygen Transfer Techniques
S. A. Zieminski; Bas; Support: Natl. Council for Stream Improvement $10,484; Info. 108

109 MAINE - University of Maine, Orono
Treatment of Protein Water From Potato Starch Manufacture
Seymour J. Ryckman; Bas-Appl; Support: State and Potato Starch Manufactures, Inc. $4,000; Info. 109

110 MARYLAND - Johns Hopkins University, Baltimore
Artificial Clays for the Fixation of Radioactive Nuclides
Walter Patrick; Bas-Appl; Support: Fed. AEC $25,000; Info. 110

111 MARYLAND - Johns Hopkins University, Baltimore
Fission Waste Disposal by Adsorption of Isotopes on Soil-Sawdust
John C. Geyer; Bas-Appl; Support: Fed. AEC $25,000; Info. 111

112 MARYLAND - Johns Hopkins University, Baltimore
Storm Drainage Inlet Design and Runoff from Urban Areas
John C. Geyer; Bas-Appl; Support: Fed-Local $30,000; Info. 112

113 MARYLAND - Johns Hopkins University, Baltimore
Transportation of Radioactive Wastes
John C. Geyer; Bas-Appl; Support: Fed. AEC $25,000; Info. 113

114 MARYLAND - Johns Hopkins University, Baltimore
Low-Flow Augmentation for Stream-Pollution Abatement
C. H. Hull; Appl Support: Fed. RG $21,045; Info. 114

115 MARYLAND - Johns Hopkins University, Baltimore
Tidal Mixing and Pollution Assimilation, St. Johns River, Florida
John C. Geyer; Bas-Appl; Support: City of Jacksonville, Fla.;
Info. 115

116 MARYLAND - Johns Hopkins University, Baltimore
Removal of ABS from Potable Water by Treatment Modification
Chas. E. Renn; Bas-Appl; Support: Assoc. of Amer. Soap &
Glycerine Producers $12,252; Info. 116

117 MARYLAND - Johns Hopkins University, Baltimore
Improvement of Molecular Membrane Bacteriological Techniques
Chas. E. Renn; Bas-Appl; Support: Salem-Brosius, Inc.; Info. 117

118 MARYLAND - Johns Hopkins University, Baltimore
Silver Ion for Disinfection of Private Water Supplies
Chas. E. Renn; Bas-Appl; Support: Salem-Brosius, Inc.; Info. 118

119 MARYLAND - Maryland State Department of Health, Baltimore
Pollution and Pollution Control for Selected Streams
Thos. W. Shives; Appl; Support: State $50,000; Info. 119

120 MASSACHUSETTS - Harvard University, Cambridge
Solubility of Oxygen in Water
J. C. Morris; Bas-Appl; Support: Fed. $5,000; Info. 120

121 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Biological Treatability of Organic Industrial Wastes
Jas. M. Symons; Bas-Appl; Support: MIT; Info. 121

122 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
Radioactive Tracer Study of Endogenous Metabolism
Jas. M. Symons; Bas-Appl; Support: Fed. RG $15,142; Info. 122

123 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
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Ross E. McKinney; Bas-Appl; Support: Fed. RG $8,500; Info. 123

124 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
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Rolf Eliassen; Bas-Appl; Support: Amer. Iron & Steel Inst., AWWA, and John B. Pierce Foundation $10,000; Info. 124

125 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
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Rolf Eliassen; Bas-Appl; Support: Fed. AEC $36,000; Info. 125

126 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
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Ross E. McKinney; Bas-Appl; Support: Fed. RG $5,000; Info. 126

127 MASSACHUSETTS - Massachusetts Institute of Technology, Cambridge
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Clair N. Sawyer; Bas-Appl; Support: Fed. RG $5,400; Info. 127

128 MICHIGAN - Kalamazoo College, Kalamazoo
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Russell O. Blosser; Bas; Support: Natl. Council for Stream Improvement $1,200; Info. 128

129 MICHIGAN - Michigan State University, East Lansing
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R. U. Byerrum; Bas; Support: Fed. RG $20,000; Info. 129

130 MICHIGAN - Michigan State University, East Lansing
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131 MICHIGAN - Michigan State University, East Lansing
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132 MICHIGAN - Michigan State University, East Lansing
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Karl L. Schulze; Bas-Appl; Support: Mich. State U. Engrg. Experiment Sta. $6,000; Info. 132

133 MICHIGAN - Michigan State University, East Lansing
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R. C. Ball; Bas; Support: State $3,580; Info. 133

134 MICHIGAN - University of Michigan, Ann Arbor
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C. J. Velz; Appl; Support: State $7,000; Info. 134

135 MICHIGAN - University of Michigan, Ann Arbor
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Geo. H. Lauff; Bas; Support: Fed. RG $7,577; Info. 135

136 MICHIGAN - University of Michigan, Ann Arbor
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David C. Chandler; Bas-Appl; Support: Fed. NSF and U. of Mich.; Info. 136

137 MICHIGAN - University of Michigan, Ann Arbor
Stream Analysis and Hydrology
C. J. Velz; Bas-Appl; Support: Natl. Council for Stream Improvement $4,266; Info. 137

138 MICHIGAN - University of Michigan, Ann Arbor
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J. A. Borchardt; Bas-Appl; Support: Fed RG $15,074; Info. 138

139 MICHIGAN - Wayne State University, Detroit
Determining Radioactive Isotopes in Water and Sewage
Richard B. Hahn; Bas-Appl; Support: Fed. RG $8,500; Info. 139

140 MINNESOTA - University of Minn. School of Public Health, Minneapolis
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H. M. Bosch; Bas-Appl; Support: State $10,000; Info. 140

141 MISSISSIPPI - Mississippi State University, State College
Sewage Lagoons
Howard K. Williford; Bas-Appl; Support: State and Miss. State U. $15,000; No info.

142 NEW HAMPSHIRE - University of New Hampshire, Durham
Enterococci as Indicators of Pollution Using Membrane Filter
L. W. Slanetz; Bas-Appl; Support: Fed. RG $5,469; Info.

143 NEW JERSEY - Rutgers University, New Brunswick
Activated Sludge Studies
H. Heukelekian; Bas; Support: Fed. RG $5,778; Info.

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B. O. D. of Pure Organic Compounds
H. Heukelekian; Bas; Support: Fed. RG $4,428; Info.

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H. Heukelekian; Bas; Support: John Van Nostrand Dorr Fellowship $2,400; Info.

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Cyanogen Chloride for Determining Residual Chlorine in Wastes
H. Heukelekian; Bas; Support: Fed. RG $4,915; Info.

147 NEW JERSEY - Rutgers University, New Brunswick
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H. Heukelekian; Bas; Support: Fed. RG $3,929; Info.

148 NEW JERSEY - Rutgers University, New Brunswick
Lime Neutralization of Dilute Acid Wastes
H. Heukelekian; Bas; Support: Natl. Lime Assoc. $4,000; Info.

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Analysis of Organic Matter in Soluble Fractions of Sewage
H. Heukelekian; Bas; Support: Fed. RG $5,462; Info.

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Slime Infestation in Streams
H. Heukelekian; Bas; Support: Natl. Council for Stream Improvement $4,800; Info.

151 NEW JERSEY - Rutgers University, New Brunswick
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H. Heukelekian; Bas; Support: Fed. RG $4,571; Info. 151

152 NEW JERSEY - Rutgers University, New Brunswick
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H. Heukelekian; Bas; Support: Fed. RG $4,312; Info. 152

153 NEW JERSEY - Rutgers University, New Brunswick
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154 NEW MEXICO - N. M. College of Agr. and Mechanic Arts, State College
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155 NEW YORK - Assoc. of American Soap and Glycerine Producers, New York
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156 NEW YORK - Assoc. of American Soap and Glycerine Producers, New York
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157 NEW YORK - Columbia University, New York
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158 NEW YORK - Columbia University, New York
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Ernest J. Henley; Bas; Support: Natl. Council for Stream Improvement $2,000; Info. 158

159 NEW YORK - Cornell University, Ithaca
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Chas. D. Gates; Bas-Appl; Support: Fed. RG $5,129; Info. 159

160 NEW YORK - Cornell University, Ithaca
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Chas. D. Gates; Appl; Support: State $6,000; Info. 160

161 NEW YORK - Haskins Laboratories, New York
Nutritional Studies on Planktonic Algae
Luigi Provasoli; Bas; Support: Fed. RG $14,000; Info. 161

162 NEW YORK - C. W. Lauman & Company, Beth Page, Long Island
Detergent Wastes From Laundries in Ground Waters of Long Island
C. W. Lauman Co.; Appl; Support: State $5,000; Info. 162

163 NEW YORK - Manhattan College, Riverdale
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Manhattan College; Bas-Appl; Support: State $4,750; Info. 163

164 NEW YORK - Manhattan College, Riverdale
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Manhattan College; Appl; Support: State $3,185; Info. 164

165 NEW YORK - Manhattan College, Riverdale
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Manhattan College; Bas-Appl; Support: State $4,750; Info. 165

166 NEW YORK - Manhattan College, Riverdale
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Donald J. O'Connor; Bas-Appl; Support: State $6,300; Info. 166

167 NEW YORK - Manhattan College, Riverdale
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Donald J. O'Connor; Bas-Appl; Support: Fed. RG $10,350; Info. 167

168 NEW YORK - New York State Conservation Department, Albany
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State Conservation Department; Appl; Support: State $14,500; Info. 168

169 NEW YORK - New York University, New York
Effectiveness of Various Types of Milk Waste Treatment Plants
N. Y. U.; Appl; Support: State $5,750; Info. 169

170 NEW YORK - New York University, New York
Controlled Sewage Filtration - Deep Filters
Wm. T. Ingram; Bas-Appl; Support: Fed. RG $16,215; Info. 170

171 NEW YORK - New York University, New York
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Gail P. Edwards; Bas; Support: Fed. RG $6,900; Info. 171

172 NEW YORK - New York University, New York
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173 NEW YORK - New York University, New York
Mechanism of Oxygen Absorption in Aeration Processes
Wm. E. Dobbins; Bas; Support: Fed. RG $9,000; Info. 173

174 NEW YORK - Syracuse University, Syracuse
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175 NORTH CAROLINA - North Carolina State College, Raleigh
Fish Population Related to Pulp Mill Locations
B. B. Brandt; Bas; Support: Natl. Council for Stream Improvement; Info. 175

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C. Smallwood; Bas-Appl; Support: Fed. RG $9,000; Info. 176

177 NORTH CAROLINA - North Carolina State College, Raleigh
Radio-Tracers in Hydraulics of Sewage Plants
C. Smallwood; Bas-Appl; Support: N. C. State College; Info. 177

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Cholinesterase Activity of Fish Brain Tissue
Chas. M. Weiss; Bas; Support: Fed. RG $6,463; Info. 178

179 NORTH CAROLINA - University of North Carolina, Chapel Hill
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Marvin L. Granstrom; Bas; Support: Fed. NSF; Info. 179

180 NORTH CAROLINA - University of North Carolina, Chapel Hill
Oxygen in Waste Treatment
Daniel A. Okun; Bas; Support: Fed. RG $8,963; Info. 180

181 NORTH CAROLINA - University of North Carolina, Chapel Hill
Coagulation of Colloids Having Hydroxyl, Amino or Carboxyl Groups
Marvin L. Granstrom; Bas; Support: Fed. RG $5,640; Info. 181

182 NORTH CAROLINA - University of North Carolina, Chapel Hill
Reoxygenation of Benthal Sludge Load of Third Fork Creek
Chas. M. Weiss; Bas-Appl; Support: U. of N. C. Research Council $465; No info. 182

183 NORTH CAROLINA - University of North Carolina, Chapel Hill
Treatment of Liquid Wastes from Semi-Chemical Pulping Process
Daniel A. Okun; Bas-Appl; Support: The Mead Corp. $9,200; No info. 183

184 OHIO - Distillers Feed Research Council, Cincinnati
Recovery of Wastes in Distillers Dried Feeds
L. E. Carpenter; Appl; Support: Cooperating Distilleries; Info. 184

185 OHIO - Kenyon College, Gambier
Spectrophotometric Determination of Ions in Wastes and Water
J. M. Pappenhagen; Bas-Appl; Support: Fed. RG $2,875; Info. 185

186 OHIO - Ohio River Valley Water Sanitation Commission, Cincinnati
Continuous Recording and Transmission of Water Quality Data
Ohio River Valley Water Sanitation Comm; Appl; Support: State $31,500; Info. 186

187 OHIO - Ohio State University, Columbus
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Glenn Schwab; Appl; Support: Fed. U.S.D.A.; $7,000; Info. 187

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Infectious Hepatitus Specimens Studied with Fluorescent Antibody
Jackson Riddle; Bas; Support: Ohio State U.; Info. 188

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Small Scale Anaerobic-Aerobic Sewage Treatment Process
K. W. Cosens; Appl; Support: Fed. $10,000; Info. 189

190 OHIO - Ohio State University, Columbus
Acid Mine Drainage Studies
Robt. F. Baker; Bas-Appl; Support: State and Ohio State U. Natural Resources Institute $35,000; Info. 190

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191	OHIO - Ohio State University, Columbus Toxic Waste Studies - Heavy Metals Wastes W. D. Sheets; Bas-Appl; Support: State $28,000; Info	191
192	OHIO - Ohio State University, Columbus Waste Water Reclamation Edw. Q. Moulton; Bas-Appl; Support: Ohio State U. Engrg Experiment Sta. $5,000; Info.	192
193	OHIO - Ohio State University, Columbus Physiology of Aquatic Bacteria in Acid Mine Drainage Chester I. Randles; Bas; Support: Fed. RG $7,446; Info.	193
194	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Design Criteria for Seepage Pits and Seepage Beds T. W. Bendixen; Appl; Support: Fed. FHA $168,000; Info.	194
195	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Serological Identification of Waste Components R. L. Bunch; Bas-Appl; Support: Fed. U. S. Army $25,500; Info.	195
196	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Improvement of Analysis of Organics in Polluted Water F. M. Middleton; Bas-Appl; Support: Fed. $45,000; Info.	196
197	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Pollutional Strength of Significant Recurrent Industrial Wastes Gerald N. McDermott; Bas-Appl; Support: Fed. $4,000; Info.	197
198	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Behavior of Nitriles in Surface Water and Treatment Systems F. J. Ludzack; Bas-Appl; Support: Fed. $18,000; Info.	198
199	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Effect of Heavy Metals on Sewage Treatment Processes W. A. Moore; Bas-Appl; Support: Fed. $50,000; Info.	199
200	OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati Practical Methods for Application of Bioassays Croswell Henderson; Bas-Appl; Support: Fed. $25,000; Info.	200

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Significance of Protozoal and Metazoal Organisms in Water
S. L. Chang; Bas-Appl; Support: Fed. $14,000; Info. 201

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Harold F. Clark; Bas-Appl; Support: Fed. $57,000; Info. 202

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Wm. B. Cooke; Bas-Appl; Support: Fed. $17,000; Info. 203

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Norman A. Clarke; Bas-Appl; Support: Fed. $45,000; Info. 204

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Cecil W. Chambers; Bas-Appl; Support: Fed. $21,000; Info. 205

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H. H. Tabak; Bas; Support: Fed. $12,000; Info. 206

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Analysis of Taste and Odor Compounds from Algae and Actinomycetes
C. M. Palmer; Bas-Appl; Support: Fed. $35,000; Info. 207

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Effects of Impoundments on Water Quality
F. W. Kittrell; Bas-Appl; Support: Fed. $38,000; Info. 208

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Sewage Treatment by Stabilization Ponds
W. W. Towne; Bas-Appl; Support: Fed. $38,000; Info. 209

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Biological Oxidation Bed Studies
Ralph Porges; Bas; Support: Fed. $36,000; Info. 210

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Stream Pollution by Radioactive Wastes From Uranium Ore Refineries
E. C. Tsivoglou; Appl; Support: Fed. $15,000; Info. 211

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Anaerobic Contact Process - Complete Treatment of Domestic Sewage
Jack L. Witherow; Appl; Support: Fed. $18,798; Info. 212

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Treatment Processes for Small Water Supplies
L. J. McCabe; Appl; Support: Fed. $40,000; Info. 213

214 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Filtration Experiments for Water Treatment Processes
Gordon G. Robeck; Appl; Support: Fed. $20,000; Info. 214

215 OHIO - Robert A. Taft Sanitary Engineering Center, Cincinnati
Removal of Coliform Organisms in Water Treatment Processes
Graham Walton; Appl; Support: Fed. $7,500; Info. 215

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Graham Walton; Appl; Support: Fed. $12,500; Info. 216

217 OHIO - University of Cincinnati, Cincinnati
Taste and Odor Study of Water
J. Cholak; Bas-Appl; Support: State $18,500; Info. 217

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Chloride Uptake by Algae
Wm. E. Gates; Bas-Appl; Support: U. of Cincinnati $2,000; Info. 218

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Polarographic Determination of Dissolved Oxygen
LeRoy Reuter; Bas-Appl; Support: U. of Cincinnati $1,000; Info. 219

220 OHIO - University of Cincinnati, Cincinnati
Algal-Bacterial Symbiosis in a Closed System
John Pfeffer; Bas-Appl; Support: U. of Cincinnati $2,000; Info. 220

221 OHIO - University of Toledo, Toledo
Application of Dolomite Lime in the Treatment of Water
Robt. E. Martin; Bas-Appl; Support: Finishing Lime Assoc. of Ohio; Info. 221

222 OKLAHOMA - Oklahoma City Water Department, Oklahoma City
Lake Hefner Evaporation Reduction Studies
M. B. Cunningham; Bas-Appl; Support: State-Local; Info. 222

223 OKLAHOMA - Oklahoma State Department of Health, Oklahoma City
Isolation of Virus in a Municipal Water Supply Reservoir
F. R. Hassler; Bas; Support: Fed.-Local; $9,000; Info. 223

224 OKLAHOMA - Oklahoma State University, Stillwater
Toxicity Bioassay of Oil Refinery Wastes
Troy C. Dorris; Bas-Appl; Support: Okla. Oil Refiners Waste Control Council $12,788; No info. 224

225 OKLAHOMA - University of Oklahoma, Norman
Development of Water Quality Criteria for the State of Oklahoma
Geo. Reid; Bas-Appl; Support: State; Info. 225

226 OKLAHOMA - University of Oklahoma, Norman
Use of Chelates in Brine Stabilization
Geo. Reid; Bas-Appl; Support: Fed. Bureau of Mines; Info. 226

227 OREGON - Oregon State College, Corvallis
Toxicological - Physiological Effects of Wastes on Aquatic Life
Peter Doudoroff; Bas-Appl; Support: Fed. and Ore. State College $30,000; Info. 227

228 OREGON - Oregon State College, Corvallis
Aquatic Biology Aspects of Stream Pollution
Chas. E. Warren; Bas-Appl; Support: Fed., Industry and Ore. State College $23,000; Info. 228

229 OREGON - Oregon State College, Corvallis
The Disposal of Sulfite Pulping Effluents
Isaiah Gellman; Bas-Appl; Support: Natl. Council for Stream Improvement $9,000; Info. 229

230 OREGON - Oregon State College, Corvallis
Resistance of Marine Animals to Various Pollutional Conditions
R. E. Dimick; Bas-Appl; Support: Fed. RG; National Council for Stream Improvement and Ore. Agric. Experiment Sta. $20,000; Info. 230

231 OREGON - Oregon State College, Corvallis
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Robt. H. Ruth; Bas-Appl; Support: State Forest Service; Info. 231

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Physical, Chemical, Biological Aspects of Deep Trickling Filters
Fred Merryfield; Bas-Appl; Support: State & Ore. State College Engrg. Experiment Sta.; Info. 232

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Ore. State Coll. Engrg. Experiment Sta.; Bas-Appl; Support: State and Ore. State Coll. $5,050; Info. 233

234 OREGON - Oregon State College, Corvallis
Sewage Oxidation Lagoon Project
Fred J. Burgess; Appl; Support: State, Ore. State College and City of Corvallis $9,385; Info. 234

235 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Biological Survey of Tidal Estuary of the Delaware River
Ruth Patrick; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin $17,500; Info. 235

236 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Environment and Toxicity of Compounds to Aquatic Life
Ruth Patrick; Bas-Appl; Support: Fed. RG $14,286; Info. 236

237 PENNSYLVANIA - Academy of Natural Sciences, Philadelphia
Studies of Recovery of Polluted River Water
Ruth Patrick; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin; Info. 237

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Effect of ABS in Water on Aquatic Life
H. Radycliffe Roberts; Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $2,000; Info. 238

239 PENNSYLVANIA - Lehigh University, Lehigh
Instruments to Analyze Delaware River Water Quality
Geo. W. Jenkins; Bas-Appl; Support: Fed. and Interstate Comm. on Del. River Basin $10,000; Info. 239

240 PENNSYLVANIA - Lehigh University, Lehigh
Neutralization of Bottom Muds and Waters by Alkaline Stack Dusts
Geo. W. Jenkins; Bas; Support: Fed. and Interstate Comm. on Del. River Basin $12,500; Info. 240

241 PENNSYLVANIA - Mellon Institute, Pittsburgh
Study of Sedimentation Emphasizing Flue Dust and Mill Scale
Richard D. Hoak; Bas-Appl; Support: Amer. Iron and Steel Inst; Info.

242 PENNSYLVANIA - Mellon Institute, Pittsburgh
The Origin of Tastes and Odors in Drinking Water
Richard D. Hoak; Bas; Support: Amer. Iron and Steel Inst.; Info.

243 PENNSYLVANIA - Pennsylvania State University, University Park
Aerobic Metabolism of Cyanogenic Compounds
John B. Nesbitt; Bas; Support: Fed. RG $3,000; Info.

244 PENNSYLVANIA - Pennsylvania State University, University Park
Design Criteria for Total Oxidation Activated Sludge Treatment
R. Rupert Kountz; Bas-Appl; Support: Fed. RG $15,000; Info.

245 RHODE ISLAND - Rolf Eliassen Associates, Inc., Cranston
Plant Scale Study of Complete-Mixing Activated Sludge Process
Ross E. McKinney; Appl; Support: State and Assoc. of Amer. Soap & Glycerine Producers $17,000; Info.

246 TENNESSEE - Tennessee Department of Public Health, Nashville
Preservation of Enteric Organisms with Chelating Agents
Ernest L. Shipe; Bas-Appl; Support: Fed. RG $10,000; Info.

247 TEXAS - Baylor University, Waco
Toxic Properties of the Blue-Green Algae
Floyd F. Davidson; Bas-Appl; Support: Fed. RG; Info.

248 TEXAS - North Texas State College, Denton
Chemical and Physical Quality of Lake Texoma Water
J. K. G. Silvey; Bas; Support: Fed. $1,890; Info.

249 TEXAS - North Texas State College, Denton
Nutritional Requirements of Aquatic Actinomycetes
J. K. G. Silvey; Bas; Support: Fed. RG $14,400; Info.

250 TEXAS - University of Texas, Austin
Ground Water Recharge as Affected by Phosphate Solubilities
Earnest F. Gloyna; Bas; Support: Industrial Organization; No info.

251	TEXAS - University of Texas, Austin Low-Level Radioactivity Background Survey Earnest F. Gloyna; Bas-Appl; Support: Fed. AEC $10,800; Info	251
252	TEXAS - University of Texas, Austin Reactor Fuel Waste Disposal - Salt Cavity Type Earnest F. Gloyna; Bas-Appl; Support: Fed. AEC $20,000; Info.	252
253	TEXAS - University of Texas Medical Branch, Galveston Disinfection of Sewage and Sewage Sludges by Halogens C. H. Connell; Bas-Appl; Support: Fed. RG $11,000; Info.	253
254	UTAH - University of Utah, Salt Lake City Oxidation Pond Characteristics - Raw Domestic Sewage Grant K. Borg; Bas-Appl; Support: State $6,000; Info.	254
255	UTAH - Utah State University, Logan Effects of Fluorides on Fish Wm. F. Sigler; Bas; Support: Fed. RG $12,995; Info.	255
256	UTAH - Utah State University, Logan Water Supplies and Utilization in Various Utah Counties Jay M. Bagley; Appl; Support: State; Info.	256
257	VERMONT - University of Vermont, Burlington Nutritional Requirements of Kirchneriella Subsolitaria Milton Potash; Bas; Support: Fed. RG $6,325; Info.	257
258	VERMONT - University of Vermont, Burlington Value of Whey When Used on Soil and Crops A. R. Midgley; Bas-Appl; Support: State and U. of Vt. $5,500; Info.	258
259	VIRGINIA - Virginia Polytechnic Institute, Blacksburg Resistance of Bituminous Fibre Pipe Joints to Root Penetration W. A. Parsons; Appl; Support: Bituminous-Fibre Pipe Inst. $6,000; Info.	259
260	VIRGINIA - Virginia Polytechnic Institute, Blacksburg Analysis and Treatment of Semi-Chemical Pulping Effluents Millard H. Robbins; Appl; Support: Natl. Council for Stream Improvement $9,624; Info.	260

261 WASHINGTON - Washington State University, Pullman
Some Characteristics of Anaerobic Digestion
G. H. Dunstan; Bas-Appl; Support: Fed. RG and Wash. State U. $9,000; Info. 261

262 WASHINGTON - Washington State University, Pullman
Sewage Oxidation Ponds in Washington
G. H. Dunstan; Appl; Support: Consulting Engr. and Wash. State U. $1,500; Info. 262

263 WASHINGTON - Washington State University, Pullman
Study of Sphaerotilus in Irrigation Water
G. H. Dunstan; Bas-Appl; Support: City of Walla Walla and Wash. State U. $5,000; Info. 263

264 WASHINGTON - University of Washington, Seattle
Data Collection in Marine Waters Adjacent to Manufacturing Area
Clifford A. Barnes; Bas; Support: State $1,200; Info. 264

265 WASHINGTON - University of Washington, Seattle
Large Lake Fertilized With Sewage Treatment Plant Effluent
W. T. Edmondson; Bas; Support: Fed. RG $10,421; Info. 265

266 WASHINGTON, DISTRICT OF COLUMBIA - Georgetown University, Washington
Radioactive Isotope Technique for Detection of Coliforms
Walter C. Hess; Bas-Appl; Support: Fed. RG $20,000; Info. 266

267 WISCONSIN - American Society of Brewing Chemists, Milwaukee
Increasing In-Plant Recovery of Brewing Process Yeast and Grain
Alex Sigal; Appl; Support: Member Breweries; Info. 267

268 WISCONSIN - Red Dot Foods, Madison
Waste Disposal
Ken Sellers; Appl; Support: Nicolay Dancey; Info. 268

269 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Cooperative Stream Studies and Land Disposal Projects
A. J. Wiley; Appl; Support: State, Industry, and Sulphite Pulp Mfrs. Res'ch League; $7,800; Info. 269

270 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Saline Water Conservation for Processing Spent Sulphite Liquor
A. J. Wiley; Bas-Appl; Support: Sulphite Pulp Mfrs. Res'ch League; Info. 270

271 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Basic Research on Lignin Components of Spent Sulphite Liquor
Irwin Pearl; Bas; Support: Sulphite Pulp Mfrs. Research League $27,000; Info. 271

272 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Applied Research on Lignin Components of Spent Sulphite Liquor
Julius Benko; Bas-Appl; Support: Sulphite Pulp Mfrs. Res'ch League $16,750; Info. 272

273 WISCONSIN - Sulphite Pulp Manufacturers' Research League, Appleton
Research on Carbohydrates of Spent Sulphite Liquor
Lawrence A. Boggs; Bas-Appl; Support: Sulphite Pulp Mfrs. Res'ch League $27,000; Info. 273

274 WISCONSIN - University of Wisconsin, Madison
Stabilization Pond Studies
G. A. Rohlich; Bas-Appl; Support: Oscar Mayer & Co., Rockefeller Foundn., and U. of Wisc. Alumni Res'ch Foundn.; Info. 274

275 WISCONSIN - University of Wisconsin, Madison
Thermophilic Digestion of Activated Sludge
G. A. Rohlich; Bas; Support: U. of Wisc. Alumni Res'ch Foundn. $2,320; Info. 275

276 WISCONSIN - University of Wisconsin, Madison
Use of Aeration in the Conditioning of Sewage Sludges
G. A. Rohlich; Bas-Appl; Support: Walker Process Equipment Co. $2,850; Info. 276

277 WISCONSIN - University of Wisconsin, Madison
Spray Irrigation of Dairy Wastes
L. E. Engelbert; Appl; Support: Fed. U.S.D.A. $5,400; Info. 277

278 WISCONSIN - University of Wisconsin, Madison
Frothing in Sewage Treatment
G. A. Rohlich; Bas-Appl; Support: Assoc. of Amer. Soap & Glycerine Producers $12,000; Info. 278

279 WISCONSIN - University of Wisconsin, Madison
Effect of Algae on BOD Measurements
Geo. P. Fitzgerald; Bas; Support: Fed. NC $12,600; Info. 279

280 WISCONSIN - University of Wisconsin, Madison
Effect of Pollutants on Fish Flavor
Dorothy Strong; Bas; Support: State $5,150; Info. 280

ANALYSIS OF DATA IN RESEARCH PROJECT LIST

The following is a brief analysis of the information contained in the preceding project list. This year's listing of 280 projects represents work that is being conducted in 38 of the 50 states and the District of Columbia. As might be expected, the research is fairly heavily concentrated in a small number of states. The 12 states reporting the most projects accounted for 167, or nearly 60% of the total. The total figure includes Ohio, with the exception of the 23 projects at the Public Health Service Sanitary Engineering Center located in that state.

Table 1 presents a classification of water supply and pollution control research on the basis of institutions and organizations in which the research work is being done. As can be immediately seen, most of the research in this field is being done at universities, while other types of organizations take a comparatively small part in direct research activities. The bulk of research people in this field are in the schools, and this fact explains the heavy concentration of research there.

Table 1

NUMBER OF RESEARCH PROJECTS CONDUCTED IN INSTITUTIONS AND ORGANIZATIONS

	No. of Projects	Per cent
Universities	205	73.2%
State and Interstate Agencies	25	8.9%
Federal Agencies	23	8.2%
Industrial Organizations	17	6.1%
Local Agencies	10	3.6%
Total	280	100.0%

While institutions other than universities have a rather small direct role in conducting research, they make a considerable indirect contribution to supporting research in water supply and pollution control. Table 2 lists institutions and organizations and shows the amount of money from each of these sources supporting water supply and pollution control research. Since the reporting of the amount of support was voluntary, the total reported figures did not include all of the 280 projects listed in the Inventory. Table 2 presents the amount of money determined by prorating the average amount reported per project over the total number of projects supported by each source.

While the bulk of the research in this field is being conducted at universities, most of its support is coming from sources other than university budgets and special funds. Federal agencies, State agencies, and industrial organizations account for the largest amount of support. The figure for Federal Agencies includes funds from sources other than the Public Health Service. In addition, there were a small number of grants from private individuals which have not been included because the amount represented was insignificant.

TABLE 2

AMOUNT OF RESEARCH PROJECT SUPPORT BY INSTITUTIONS AND ORGANIZATIONS

	Amount	Per cent
Universities	$ 143,000	4.1%
State Agencies	928,000	26.5%
Federal Agencies	1,878,000	53.6%
Industrial Organizations	464,000	13.3%
Local Agencies	87,000	2.5%
Total	3,500,000	100.0%

This first analysis must, because of its newness, be limited in scope. In future years, comparisons and trends will doubtless be indicated and it is hoped that this publication will provide people in the field of water supply and pollution control research with at least an annual "thumb-nail sketch" of activities and trends. Analysis may be done in the future on the people involved in this research, in terms of their professional specialties. Such data would point out the importance of inter-disciplinary cooperation and would be valuable in determining the future needs of various specialties. In addition, analysis will be done on the areas in which research is being conducted in the field of water supply and pollution control. The Subject Index which follows gives an overall view of this aspect, but more detailed information might also become a guide to where research in this field is going, and where it needs, perhaps, to be increased.

2 Subject Index BY RESEARCH AREA

SUBJECT INDEX

The second section of the Research Inventory provides a working reference index for use in locating projects in the Project List. The number to the right of each reference title is the number given each project in the Project List (Section 1).

This Subject Index was designed to include only those subjects or research areas which are important because they are well represented in the group of projects reported.

The following is a list of the basic research areas contained in the index. Sub-headings of a number of these will be found in the index itself.

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3 Address List FOR INFORMATION

ADDRESS LIST

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